ANATOMY

Your Ideal Weight

A Student of the Human Figure Has Found Ankle Size the Key to Correct Weight and More Perfect Body Proportions

By JANE STAFFORD

WHAT is your ideal weight?

You may consider yourself too fat or too thin, or you may be lucky enough not to need to worry over the extra pounds. Still, by what standard are you measuring yourself?

Are you comparing yourself with Jean Harlow or Johnny Weismuller? Maybe you are comparing your actual weight with the average for several hundred men or women of your age and height, such as appears above the penny-in-the-slot scales. However, none of this gives you the correct figure for what you, yourself, should weigh, scientists now think.

Your weight is not only a personal matter, but an exclusive and individual affair. The key to what you should weigh lies in your own ankle girth.

If you have the skeletal equipment of a Juno dieting yourself down to the "average" weight may give you a thin, hungry look and a figure that is unattractively bony. On the other hand, if your ten-year-old Jimmie weighs less than your neighbor's ten-year-old Buster, Jimmie's ideal weight should be determined before you start stuffing him to make him catch up with Buster.

Originator is Medical Artist

Out in California where styles in figures are set for the whole country, a new system for determining ideal weight has been developed.

Its originator is David P. Willoughby, a medical artist of Los Angeles. Mr. Willoughby has had no training in medical sciences but he has drawn pictures to illustrate medical books. Through constant study of the human body he is said to have become far more familiar with its bony framework and muscles than the average physician. Being an artist, he is primarily interested in body proportions. In fact, he considers correct body proportions more important to health than absolutely ideal weight.

"The possibility that an individual may be of the optimal weight prescribed for its height and bony framework, does not insure that he is properly proportioned," said Mr. Willoughby. "And since it is incontestable that the proportions of the body are of far greater physiologic significance than is the mere measure of his total bulk, it follows that the distribution of the fleshy tissues is the factor of most importance in connection with optimal body-build."

Physicians may not agree with him in this, but they are interested in new and better methods of determining ideal body weight, such as Mr. Willoughby has worked out.

The method is the result of many years' labor during which time measurements were made of a considerable number of physically excellent individuals of both sexes—52 men and 20 women. It has been endorsed by many observers, and recently Dr. E. Kost Shelton of Santa Barbara reported at a meeting of the Society for the Study of Internal Secretions his successful results with it. It may be applied to all adults of the white race, regardless of nationality or so-called type of body build.

"It is based upon the principle that the fleshy parts of the body should be of a bulk in direct ratio to the size or thickness of the bony framework, irrespective of the height at which this is encountered," Dr. Shelton explained.

"It therefore prescribes the optimal, not the average, girth and diameter measurements, skeletal and fleshy, of every part of the body and when considered with the height, it proposes a body-weight commensurate with these figures."

While the bony framework is important in determining your best weight, it is not the weight of the bones alone that must be considered, Dr. Shelton pointed out. Doctors have learned from long experience that there is some relationship between your skeleton and your weight.

"It has become a custom, when comparing persons of approximately the same height, casually to explain their weight differences by the variation in the size of their bones," Dr. Shelton observed.

However, the difference in weight between large-boned and small-boned skeletons of about the same height is actually only a few pounds, while their owners may have differed in weight by many pounds. The greater part of this difference in weight in the living persons must have been made up for by the soft tissues, fat and muscle and body fluids. The large-boned person, for example, must have larger muscles than a small-boned person. Likewise his system of blood vessels must be large enough to supply his big body with blood, and he must have enough fat and fluids to keep him healthy and, incidentally, to make him look as well as his smaller-boned brother. All of these tissues, muscles, blood and blood vessels, fat and fluids, add to his weight.

Enough Poundage for Frame

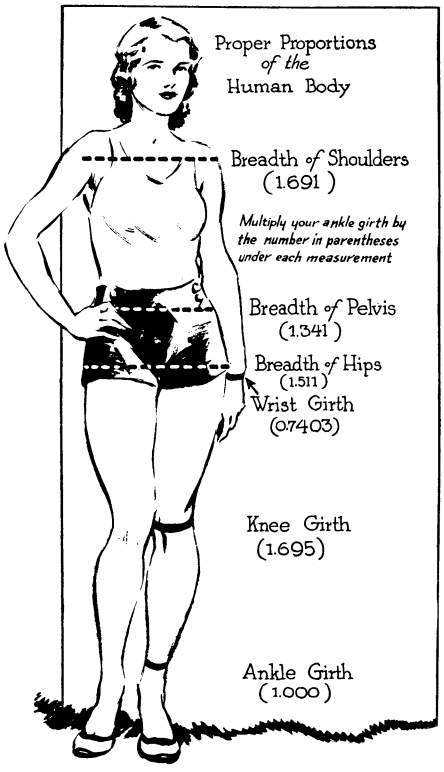
So a method of determining your ideal weight takes into consideration all these factors and allows you enough poundage to be adequately supplied with them in proportion to your bony framework.

Mr. Willoughby's weight-determination method involves the application of certain fundamental geometric relationships which he has observed in the human body. He compares the body dimensions—those pertaining to length, area and volume—to a cyclinder. The length of the cylinder is represented by the stature or height of your body; the area of an horizontal cross-section is represented by the square of the unit taken to denote the general thickness of the skeleton, he explained in a description of his method appearing in the *Research Quarterly* of the American Physical Education Association.

The body weight—volume of the cylinder—should vary as the denoted thickness of the skeleton, squared, multiplied by the stature or height.

"Thus variation in volume or weight of the body is accounted for as due not only to variation in its length (stature), but also to variation in the girth or cross-sectional area of its bony framework and the superlying musculation which should vary in correspondence therewith," he stated.

"No single measure of skeletal breadth or thickness can be assumed in the individual as an index of general



thickness of bony framework," he pointed out.

He therefore takes six measures representing the degree of skeletal thickness in various parts of the figure. These measures are then converted into a single size-unit, the ankle girth, which is taken as a basis from which to determine and prescribe all the girth and diameter measurements of the body and the weight.

Takes Six Measurements

The six measurements which he takes are the breadth of the shoulders, breadth of the pelvis, breadth of the hips, the girth of the wrist, girth of the knee and girth of the ankle. The girth measurements used are the average of the measurements for right and left sides. The ankles are measured at the thinnest part, above the ankle bone. You should be standing squarely on both feet for these measurements. The knees are measured across the kneecap. The wrist measurements are taken between the bony knobs and the hand, with the hand open and in line with the forearm and the fingers extended. These measurements should be taken with a steel measuring tape. The breadth of shoulders, pelvis and hips are measured with a calipers.

These measurements are "corrected" for the ankle girth. Then Mr. Willoughby uses a formula reminiscent of your high school algebra. The corrected ankle girth measure is squared, the squared value is multiplied by the observed measure in stature, and the product is divided by a "constant." The answer is the number of pounds of ideal or optimal body weight for the individual being measured.

Better Results for Men

In the development of his method, Mr. Willoughby found that it gives better results for men than for women. This is bound to be the case, he explained, in any rule proposed for reconciling a person's natural muscular development with his underlying bony framework. In women the thickness of the fat under the skin in relation to the thickness of the musculature varies more than in men. The fleshy parts of women's bodies are less uniformly developed in relation to the development of their bones than is the case with men, so rules about the proportion between bones and flesh are less reliable for women than for men.

Likewise certain of the skeletal measurements are a better indication of general thickness of frame for women and certain ones are better for men. For example, the broad shoulders of the husky athlete are not the best indication of his skeletal thickness. The best single criterion of skeletal thickness in the muscularly-developed man is the girth of the knee. Girth of ankle and girth of wrist come next, then breadth of pelvis, breadth of hips and finally breadth of shoulders.

The girth of Milady's dainty wrist, on the other hand, is the best criterion of her skeletal thickness. Next come the breadth of her hips, then girth of knee and breadth of shoulders. The girth of her ankle may win her a prize in the beauty contest, but it rates next to last as index of her skeletal thickness, according to Mr. Willoughby, who puts it just before the least reliable index measure in women, breadth of pelvis.

The relative value of these measures becomes important when determining ideal weight for persons so fat that it is impossible to get reliable figures for the six measurements which Mr. Willoughby's method requires. In very fat people, it may not be possible to find the hip bones, for example, and thus the measure of breadth of hips would be inaccurate. In such cases, Mr. Willoughby takes the girth of the knee in men and the girth of the wrist in women from which to derive his corrected ankle girth measure used in the final computation of optimal weight. He hopes, incidentally, that the X-rays may some day aid in determining the skeletal thickness of very well-padded subjects.

The matter of ideal body proportions and weight intrigued the ancients, and the early Greek sculptors had certain definite rules of proportion which they are said to have derived from standards devised by the Egyptians as early as 3000 B. C. However, Mr. Willoughby developed his method from a premise based on the judgment of Leonardo da Vinci regarding bodily proportions. This great Italian artist and anatomist thought that body proportions could not be governed by general measurements, but that they were an individual affair. In other words, correct proportions for you must be determined from your own measurements. Leonardo said:

"All parts of an animal should correspond with the whole; that which is short and thick, should have every member short and thick; that which is long and thin, every member long and thin; and that which is between the two, members of a proportionate size."

Not Applied to Children Yet

That was Mr. Willoughby's idea when he worked out his method of weight determination. So far, it has not been applied to children, but that will be the next step. Meanwhile, the method has been used by Dr. Shelton and associates both in private practice and in their clinics at the St. Francis and Cottage Hospitals in Santa Barbara. Here is how it works:

The 16-year-old daughter of a very obese, large-boned woman had been told repeatedly that she was from 50 to 60 pounds overweight. She was in despair, and resigned to becoming the same enormous size as her mother. Her actual weight was 187 pounds. According to the Wood table of heights and weights, she was 58 pounds overweight; according to a life insurance company table, 48 pounds overweight. With the method of Mr. Willoughby, Dr. Shelton found this girl only 27 pounds overweight. This was not such an appalling figure to the girl, and she entered into the spirit of rehabilitation and dietary re-education eagerly. Her appearance after reducing the amount indicated by the Willoughby figures showed that she had reached her own best weight for her bony framework.